



Cooke's Hollow Feasibility Study and Preliminary Design

Public Meeting #3

Town of Arlington, MA

August 4, 2023

HATCH

Agenda

1. Project Overview

- Project Team
- Overview of Previous Public Meetings
- Project Timeline

2. Presentation

- Preliminary Concept Alternatives (2)

3. Community Feedback

- Public Discussion and Comment

4. Closing Remarks + Next Steps

Project Team

- **David Morgan (Town Of Arlington)** – Town Project Manager
- **Duke Bitsko (Hatch)** - Director of Design
- **Andrew Keel (Hatch)** - Landscape Architect + Project Manager
- **Stakeholders:**
 - Arlington Conservation Commission
 - Cusack Terrace Residents
 - Arlington Police Department
 - Eversource
 - Arlington Garden Club
 - Neighbors
 - Arlington Catholic High School River

Questions and Comments

Please take notes and save questions and comments for discussion following the presentation.

We will have a plan view screen share to help facilitate feedback and document comments.

Thank You!

How to provide feedback

- This presentation will be recorded and posted on the Town website.
- Town of Arlington Contact:
dmorgan@town.arlington.ma.us
- For more information visit:
<https://www.arlingtonma.gov/Home/Components/News/News/13341/2651?backlist=%2fdepartments%2fplanning-community-development>

Cooke's Hollow – Feasibility Study Project

Goals and Objectives

1. Data Gathering:

- Evaluate existing conditions and site analysis data to identify potential opportunities for improvements with emphasis on ecological integrity and climate resilience.

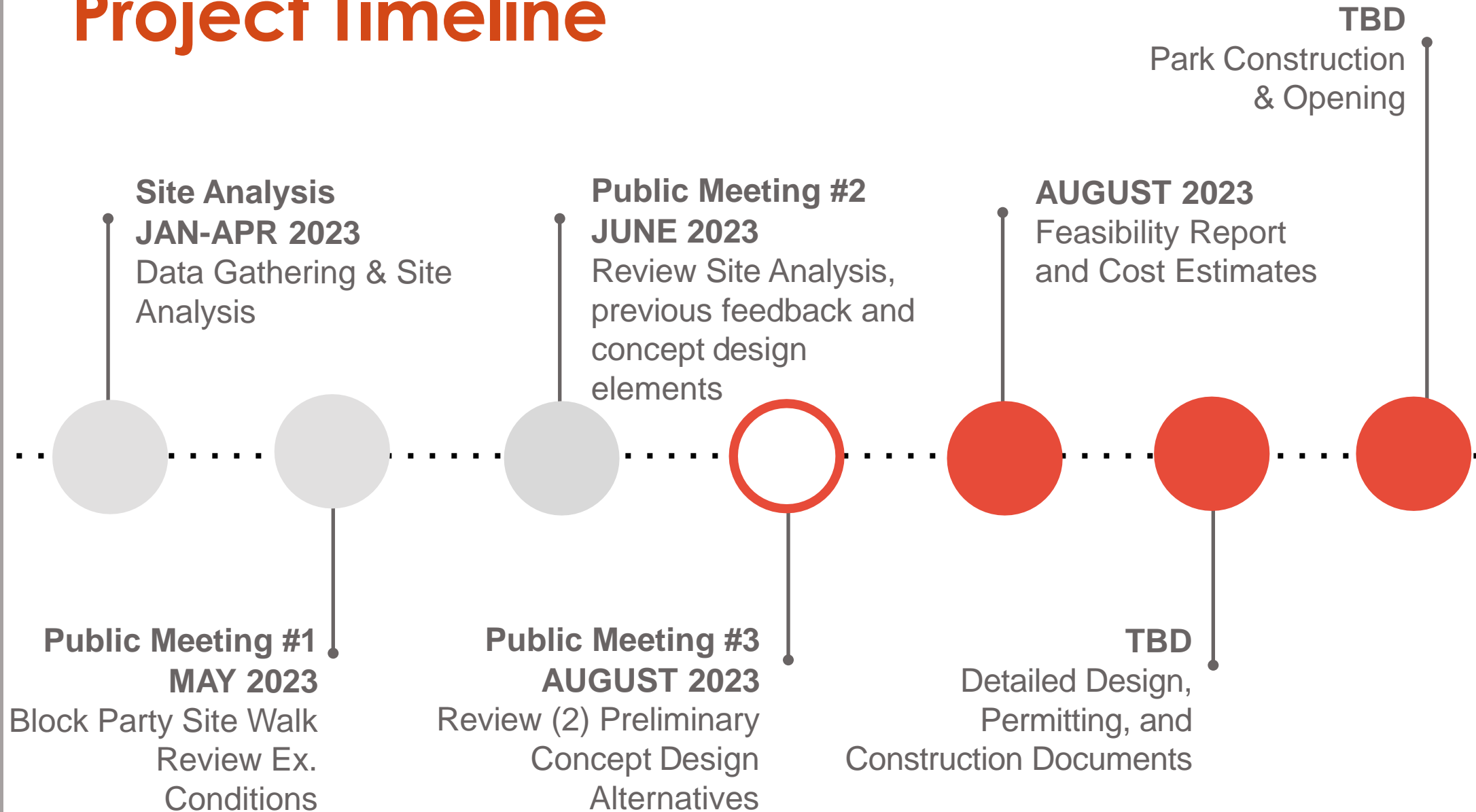
2. Community Feedback

- Engage community stakeholders to solicit feedback to inform design.

3. Feasibility Study and Preliminary Design

- Use data and feedback to identify and propose conceptual design opportunities with a focus towards environmentally sustainable planning and engineering approaches.

Project Timeline



Public Meeting #1 – May Block Party



1. Reviewed existing conditions and site analysis data on site (ecological and cultural).
2. Open discussion to garner community feedback on existing conditions.

May Block Party Feedback

1. Historic significance needs to be factored into the design
 - Cpt. George Cooke built first water mill 1637.
 - Last of (9) dams once present in Arlington.
2. Valued meditative/contemplative space.
3. Sound of running water should be buffered/amplified.
4. A place to cool off in the summer (unique microclimate).
5. Place to eat lunch or take a break during the workday.
6. Frequent route for recreation walks/walking dogs.
7. Great location to spectate/enjoy various wildlife (including ducks, heron, jays, possums, river herring).

Public Meeting #2 – Goals and Objectives

1. Reviewed existing conditions and site analysis data.
2. Reviewed preliminary design scope elements.
3. Open discussion to garner community feedback on preliminary concept design elements.

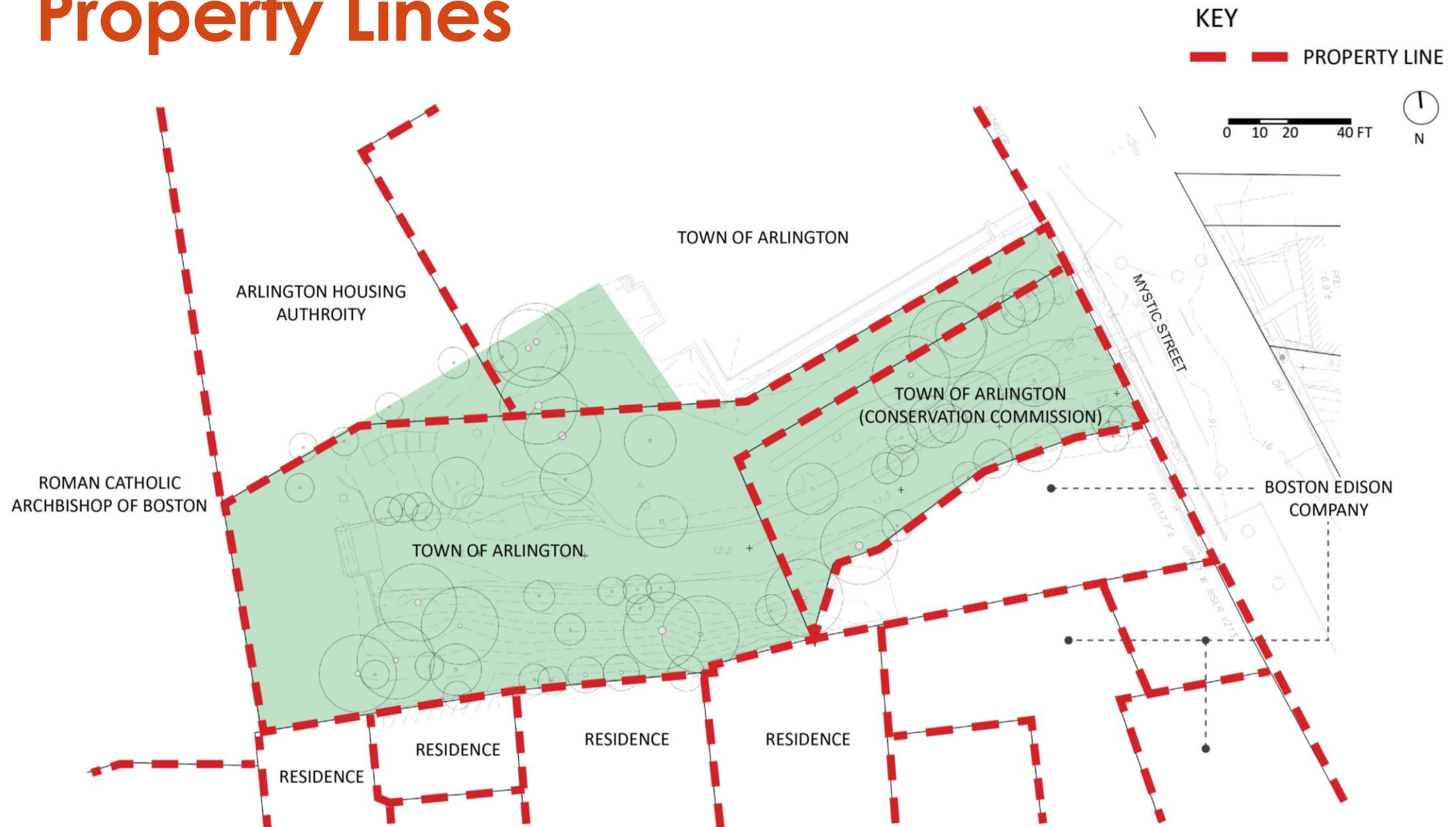
Public Meeting #3 – Preliminary Concept Design Alternatives

1. Briefly review challenging existing conditions site features and design implications.
2. Review (2) preliminary concept design alternatives.
3. Open discussion to garner community feedback on preliminary concept plans.

Project Location



Property Lines



Existing Conditions Plan



Review of Challenging Site Features

1. Narrow Pedestrian Corridor and Steep Slopes Regarding ADA Compliance.
2. Localized Flooding.
3. Steep North-facing Slope Aspect and Microclimate Conditions.
4. Dominant Invasive Tree Canopy.

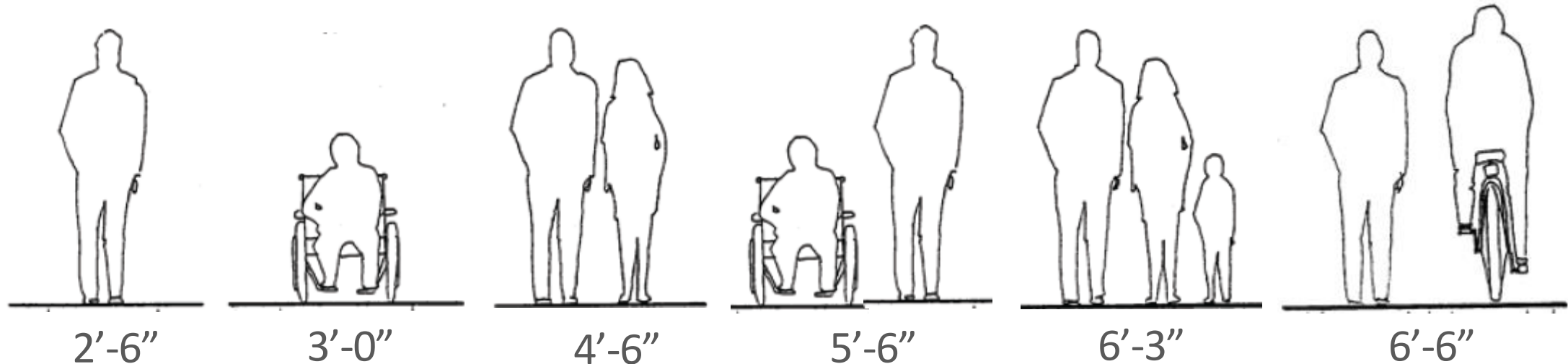
Accessibility and ADA Compliance

Americans with Disabilities Act Accessibility Standards (ADA)

- Maximum permitted slope of 5.0% and firm and stable surface material.
- Project objective to comply with ADA standards.

Design Approach

1. Aim to achieve pathway surface under 5% slope to top of falls.
2. If 5% slope not feasible, consider ramp system; **ramp system must have handrails.
3. Align pathways to limit impacts on the resource areas.
4. Pursue porous materials that are resilient to flooding and effects of climate change.



Pathway Surfacing Options

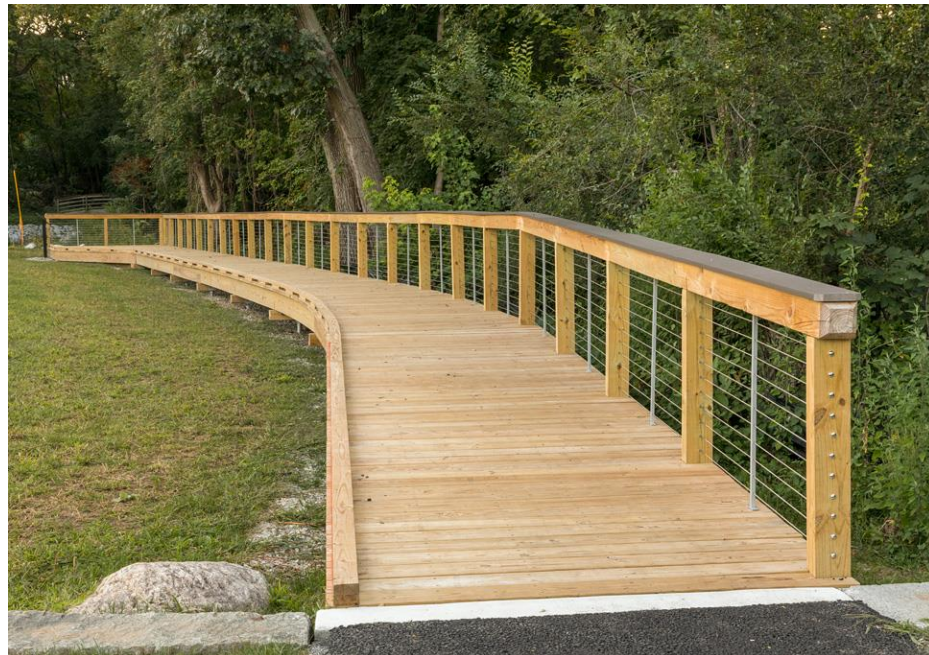
Porous Bituminous Concrete

1. **ADA-compliant**
2. **Cost: Low**
3. **Maintenance: Medium**
4. **Local Examples:**
 - Wellington Park
 - Perimeter Road, Fresh Pond Reservation, Cambridge



Timber Boardwalk

1. **ADA-compliant**
2. **Cost: High**
3. **Maintenance: Replacement**
4. **Local Examples:**
 - Wellington Park
 - Spy Pond Park, Arlington



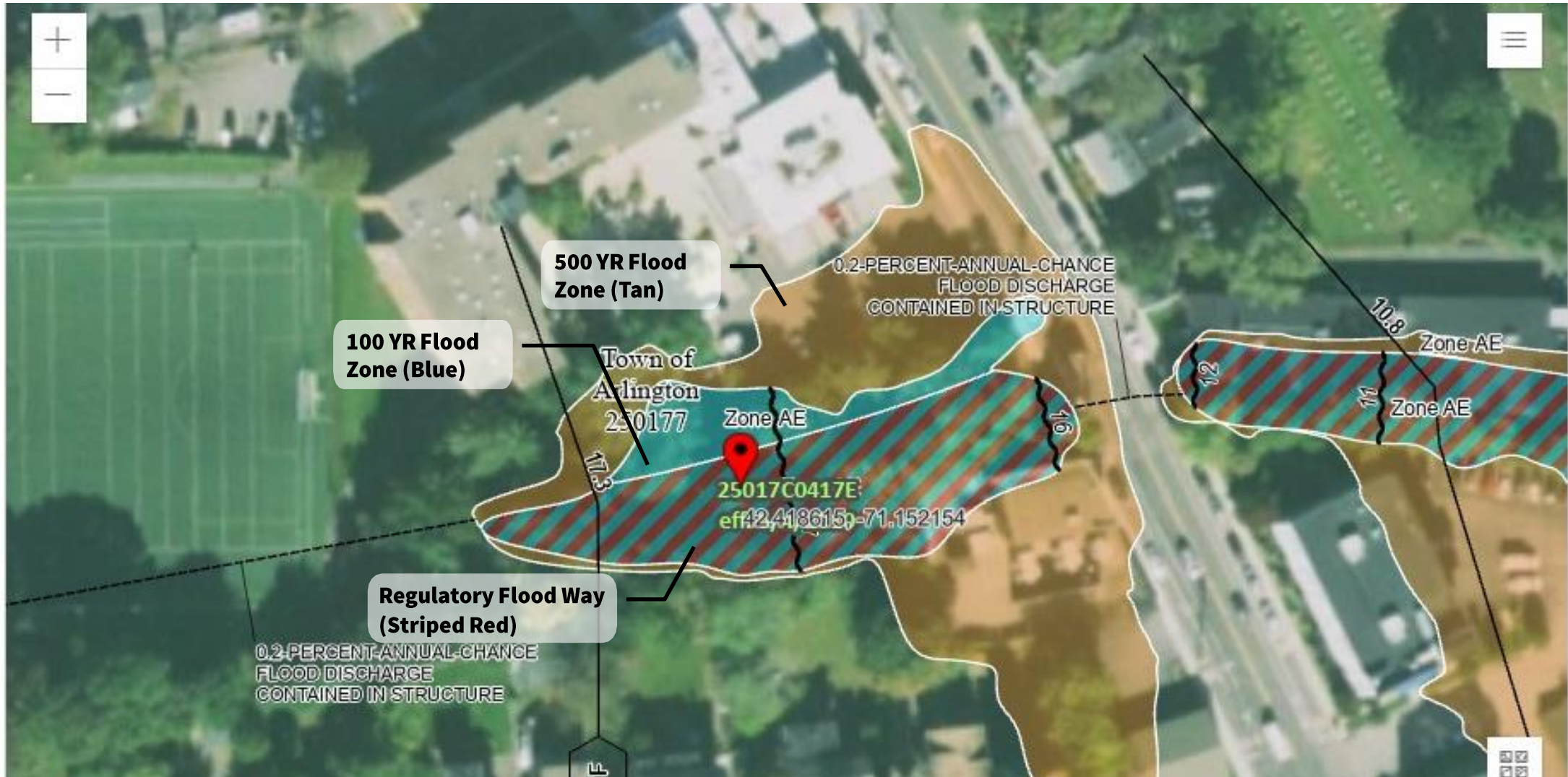
Pathway Surfacing Options

Stabilized Aggregate

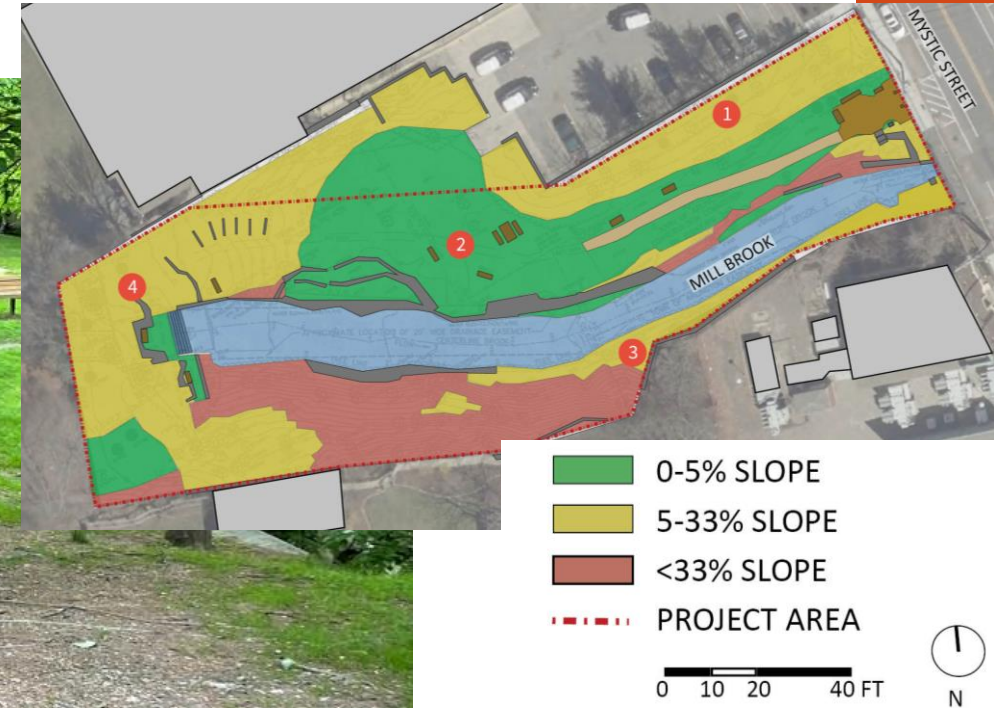
1. **ADA-compliant**
2. **Cost: Medium**
3. **Maintenance: Medium**
4. **Local Examples:**
 - Arlington Reservoir
5. **Issues:**
 - Not a porous surface.
 - Performs poorly in areas:
 - Prone to flooding
 - Dense shade
 - Steeper slopes.



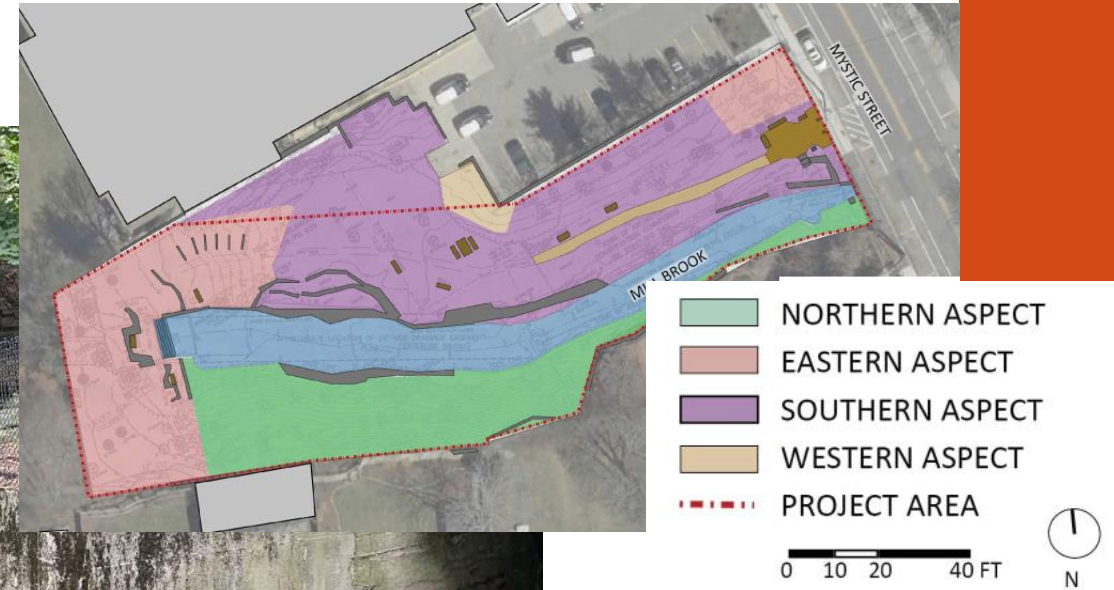
Localized Flooding - FEMA Flood Zones



Steep Slopes, Aspect and Microclimate



Steep Slopes, Aspect and Microclimate



Tree Assessment - Dominant Invasive Canopy

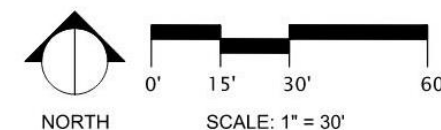
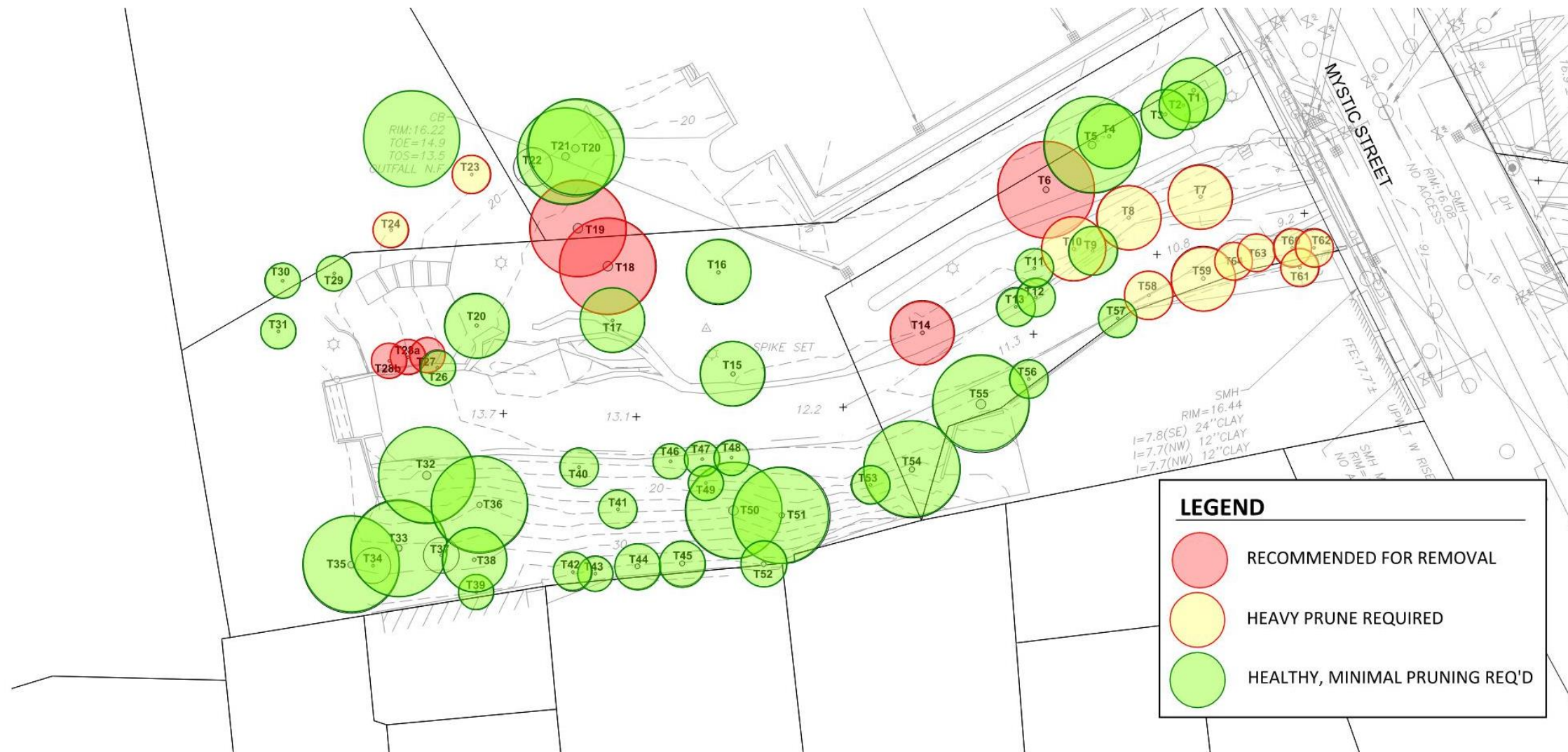
1. Trees 6" and above were assessed (68 Total).
2. 7 Trees recommended for removal (Hazards).
3. 12 Trees require significant pruning to remove wisteria vine and hazardous leaders.
4. 38% of all trees (>6") are state-listed invasive species.



COOKE'S HOLLOW

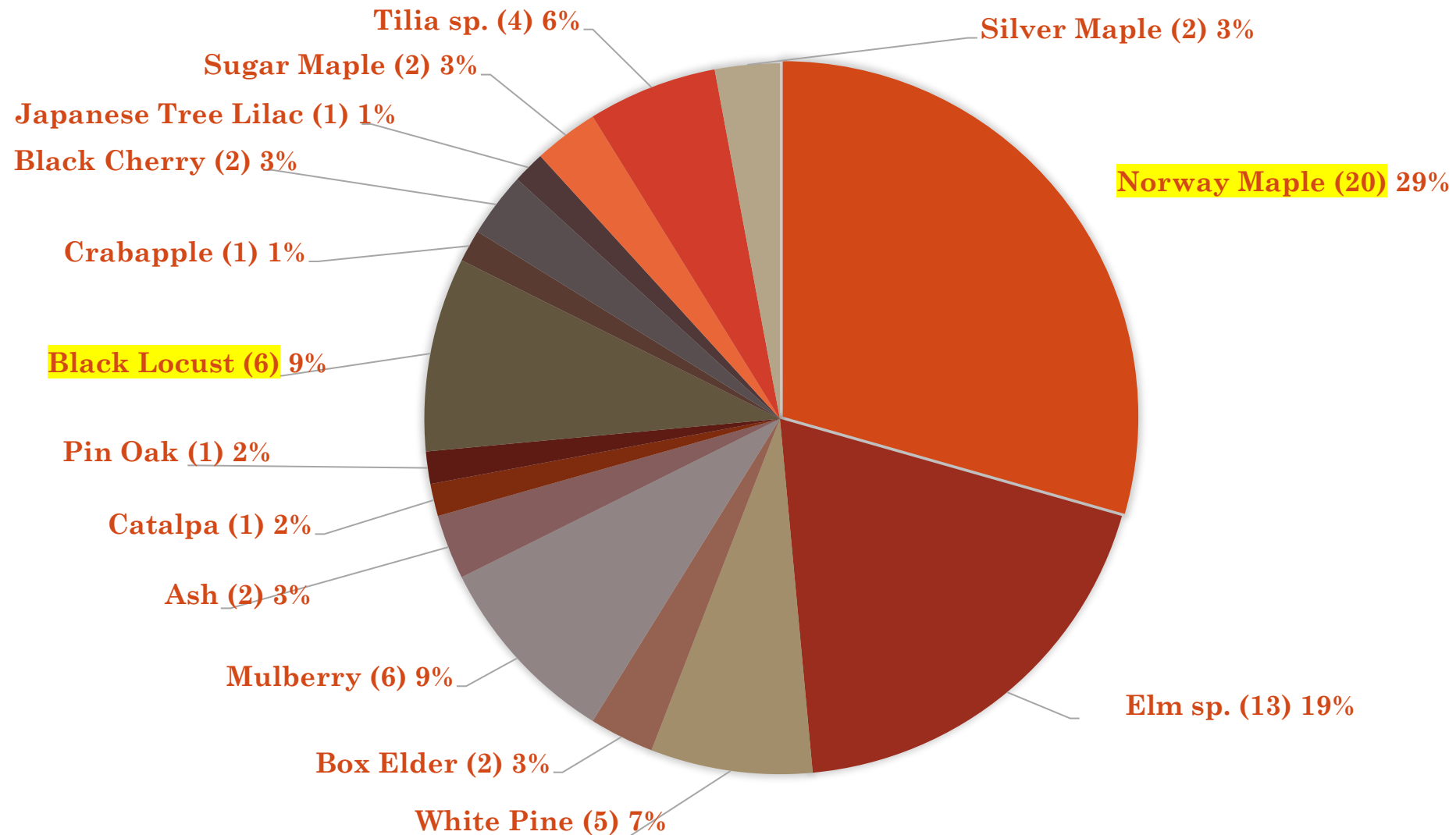
COOKE'S HOLLOW

TREE ASSESSMENT KEY PLAN



Vegetation – Tree Statistics

SPECIES COMPOSITION (> 6" DBH)



Review of Design Goals and Objectives

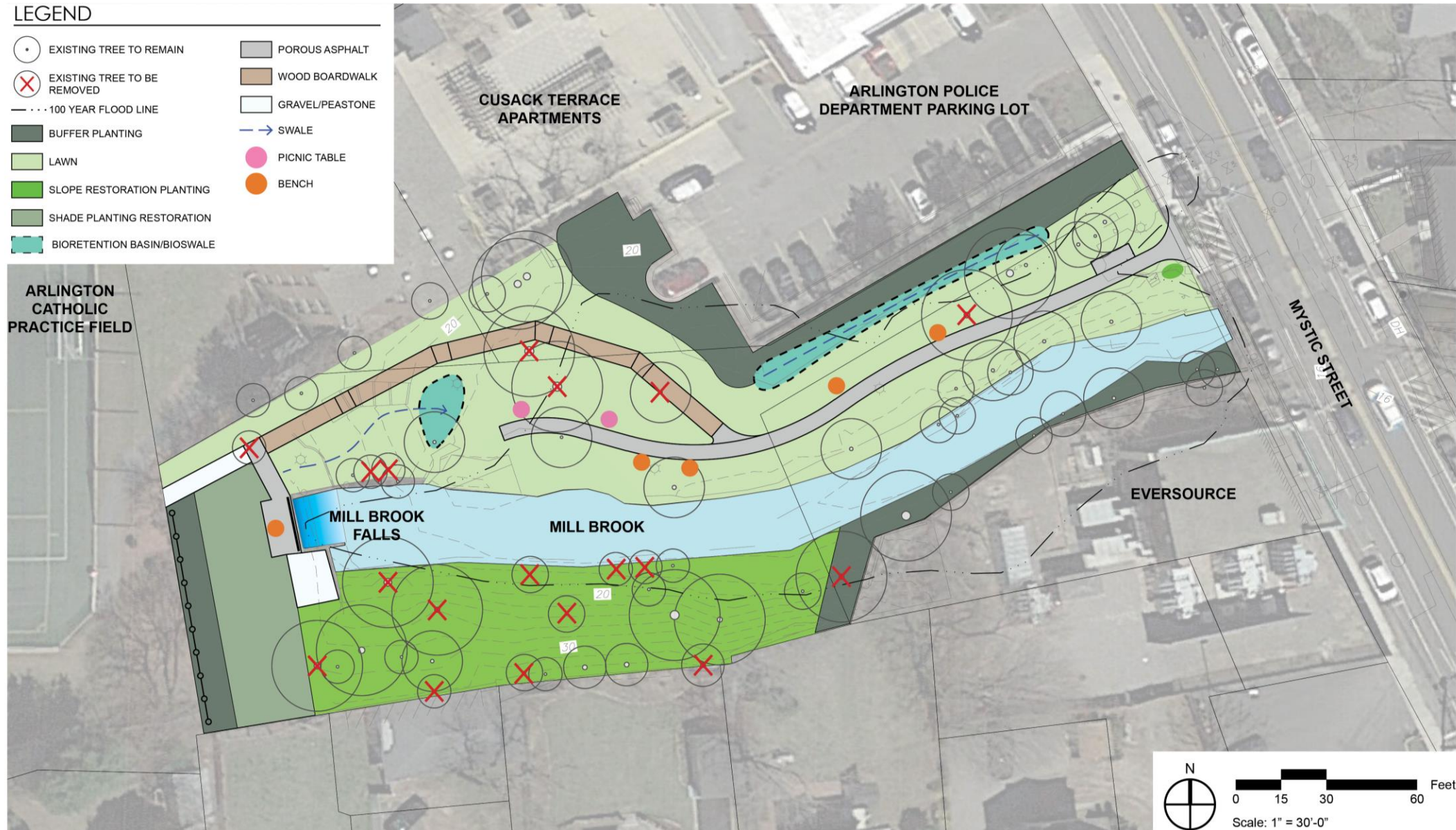
Based on site analysis data and community feedback:

1. Improve park circulation and universal accessibility.
2. Enhance park aesthetic and maintain historic character.
3. Improve perimeter buffers and preserve natural feel/sense of place.
4. Unify aesthetic of site furnishings (signage, lighting, benches, etc.).
5. Address dominant invasive tree canopy.
6. Add native plantings and improve wildlife habitat.
7. Evaluate opportunities for green infrastructure and drainage improvements to mitigate the effects of flooding and climate change especially extreme heat.

Concept Alternative 1

LEGEND

 EXISTING TREE TO REMAIN	 POROUS ASPHALT
 EXISTING TREE TO BE REMOVED	 WOOD BOARDWALK
 100 YEAR FLOOD LINE	 GRAVEL/PEASTONE
 BUFFER PLANTING	 SWALE
 LAWN	 PICNIC TABLE
 SLOPE RESTORATION PLANTING	 BENCH
 SHADE PLANTING RESTORATION	
 BIORETENTION BASIN/BIOSWALE	



Concept Alternative 1

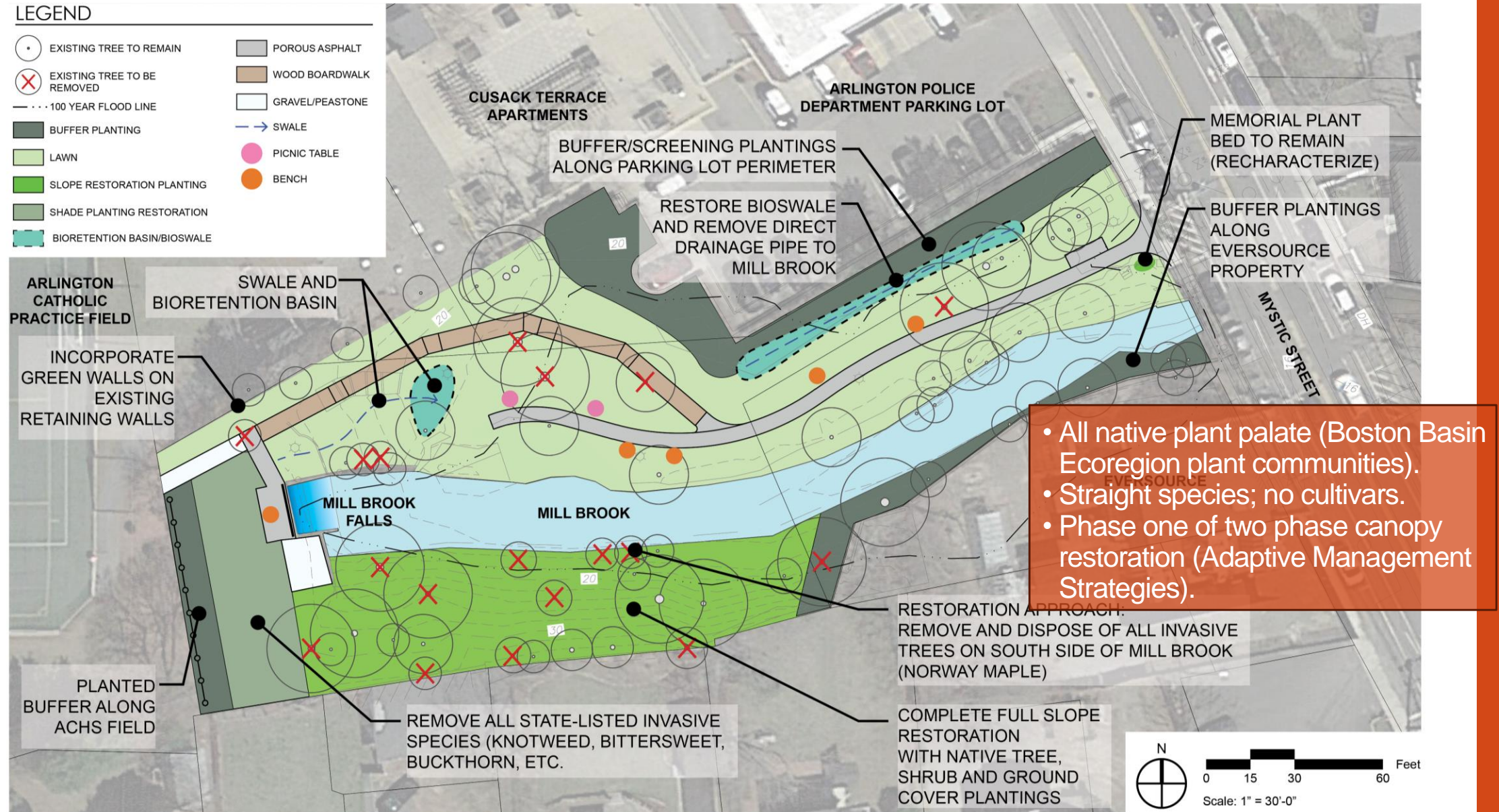
Surfacing and Accessibility

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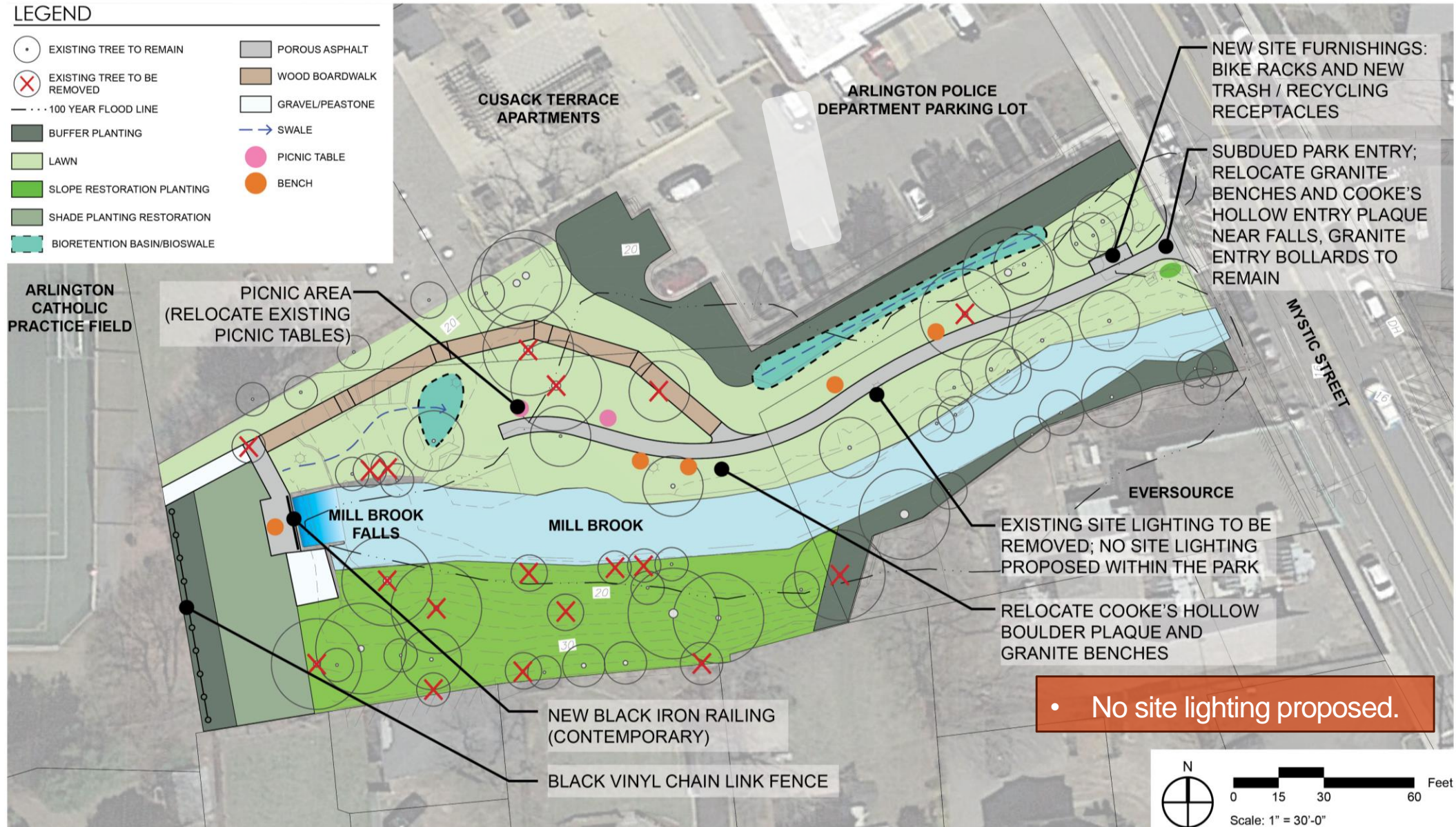


Concept Alternative 1 Planting, Invasive Management and G.I.



Concept Alternative 1

Site Furnishings



Alternative 1 - Design Element Examples



Elevated Boardwalk
(Alewife Stormwater Wetland)



Elevated Boardwalk
(Wellington Park)

Alternative 1 - Design Element Examples



Green Screen



Relocate Plaque



Granite Interpretive Engraving

Alternative 1 - Design Element Examples



Steep Slope Restoration
(Fresh Pond Reservation, Cambridge)



Conveyance Swale and
Bioretention Basin (Spy Pond Park)

Alternative 1 - Design Element Examples



Steep Slope Restoration
(Glacken Slope at Fresh Pond Reservation)

Planting Strategy (Example)

1. Replicate Natural Communities Indigenous to Mystic River Watershed
2. Restoration of Riparian Floodplain Forest
3. Woodland Understory (Upland)
4. Native, Non-cultivar Species
5. Highly Adaptive Plants—Minimize Maintenance
6. Improved Habitat for Wildlife

High-terrace Floodplain Forest

State Rank: S2 - Imperiled



High-terrace Floodplain Forest with mixed herbaceous layer and floodline visible on the nearest tree. Photo: Jennifer Kearsley, NHESP.

Description: High-terrace Floodplain Forests occur on raised banks adjacent to rivers and streams, on steep banks bordering high-gradient rivers in the western parts of the state, on high alluvial terraces, and on raised areas within major-river and small-river floodplain forests. In general, these communities are within the 100-year flood zone of rivers, so are river influenced, but they typically are not flooded annually as indicated by the presence of a distinct surface soil organic layer. Soils are typically silt loams. As with other types of floodplain forests and Rich, Mesic Forests, the rich soils and moist conditions make disturbed areas in them prone to invasions by exotic plant species.

Characteristic Species: These floodplain forests typically have species from lower floodplain forests mixed with species from mesic, upland forests. The canopy may include red, silver, and sugar maples, birches, hickories, ashes, butternut, sycamore, cottonwood, black

High-Terrace Floodplain Forests are deciduous hardwood forests that occur along riverbanks, above the zone of annual flooding. Although they do not flood annually, they flood often enough for the soil to be moderately enriched.

cherry, basswood, and elms. An open subcanopy usually includes ironwood and canopy species. The shrub layer varies from sparse to well-developed with arrowwood, nannyberry, and winterberry commonly mixed with invasive non-native shrubs including multiflora rose, Japanese knotweed, Japanese barberry, and buckthorns. The herbaceous layer is a mixture of the characteristic floodplain forest plants - sensitive fern, ostrich fern, and wood-nettle - and rich upland herbs, such as lady fern, zigzag goldenrod, white snakeroot, jack-in-the-pulpit, and bellwort. Native and non-native vines can be very dense in places.



High-terrace Floodplain Forest with dense barberry patches in the otherwise diverse understory. Photo: Patricia Swain, NHESP.

Differentiating from Related Communities:

Occurrences of High-terrace Floodplain Forests tend to be relatively small narrow forests on high alluvial terraces that flood only occasionally (not annually) and for a shorter duration than other types of floodplain forests. Less flooding typically results in more structural and species diversity than found in other floodplain forests.

High-terrace Floodplain Forests are most closely related to the Transitional Floodplain Forests, Small-river Floodplain Forests, and Rich, Mesic Forests. They are sometimes seen as a hybrid between floodplain and upland forests as the vegetation composition of all layers of this forest type shares species with other floodplain forests and with Rich, Mesic Forests (for example, silver and red maple grow with sugar maple, ostrich fern with lady fern). They have more litter accumulated than other floodplain forests. Alluvial Red Maple Swamps along low-gradient rivers flood annually and are slow to drain. Silver maple is often a codominant with red maple. Alluvial Hardwood Flats are along small streams that have multiple short flooding events throughout the year after storms. Black cherry and white pine are usually abundant in the canopy with red maple, but not silver maple.

Habitat for Associated Fauna: High-terrace Floodplain Forests can contain low wet depressions that function



as vernal pools and provide important amphibian breeding habitat. Being small communities, they are part of the habitat of the wide ranging riverine and upland animals.

Examples with Public Access: George L. Darey Housatonic WMA, Lenox; Knightville WMA, Huntington and Chesterfield; Arcadia WS (MAS), Northampton; Bolton Flats WMA, Bolton and Lancaster.



High-terrace Floodplain Forest with diverse canopy and herbaceous layers. Photo: Michael Batchner.



From: *Classification of Natural Communities of Massachusetts* <http://www.mass.gov/nhesp/>
Natural Heritage & Endangered Species Program, Division of Fisheries & Wildlife, 1 Rabbit Hill Rd., Westborough, MA 01581

Updated: 2016
(508) 389-6360

Riparian Floodplain Community

Canopy Trees

1. *Acer rubrum*
(red maple)
2. *Quercus bicolor*
(swamp white oak)
3. *Betula nigra*
(river birch)
4. *Ulmus americana*
(American elm)



Riparian Floodplain Community

Shrubs and Groundcovers

1. ***Lindera benzoin***
(spicebush)
2. ***Cornus amomum***
(silky dogwood)
3. ***Ilex verticillata***
(winterberry)
4. ***Viburnum dentatum***
(arrowwood)
5. ***Spiraea alba***
(meadowsweet)
6. ***Clethra alnifolia***
(summersweet)
7. ***Onoclea sensibilis***
(sensitive fern)

Slope Shrubs

1. mountain laurel
2. rhododendron
3. viburnum



Woodland Understory – Trees/Shrubs

1. ***Cornus florida***
(flowering dogwood)

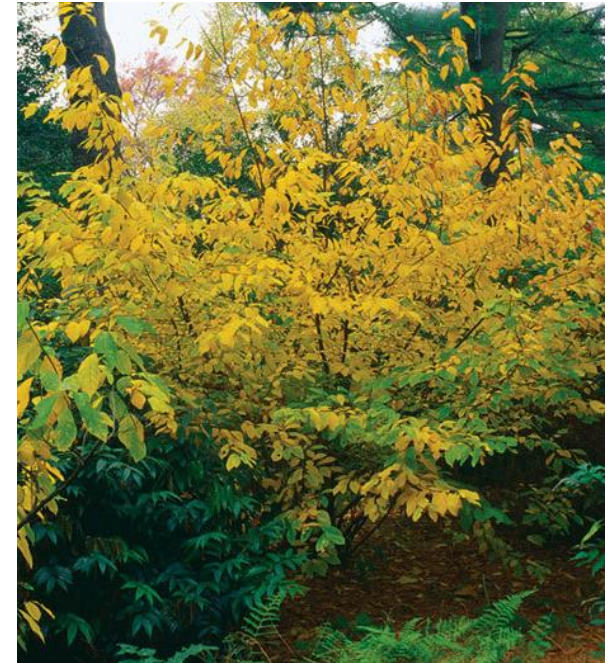
2. ***Lindera benzoin***
(spicebush)

3. ***Cornus racemosa***
(gray dogwood)

4. ***Hamamelis virginiana***
(witchhazel)

5. ***Ostrya virginiana***
(Hop-hornbeam)

6. ***Carpinus caroliniana***
(Ironwood)



Woodland Understory - Groundcovers

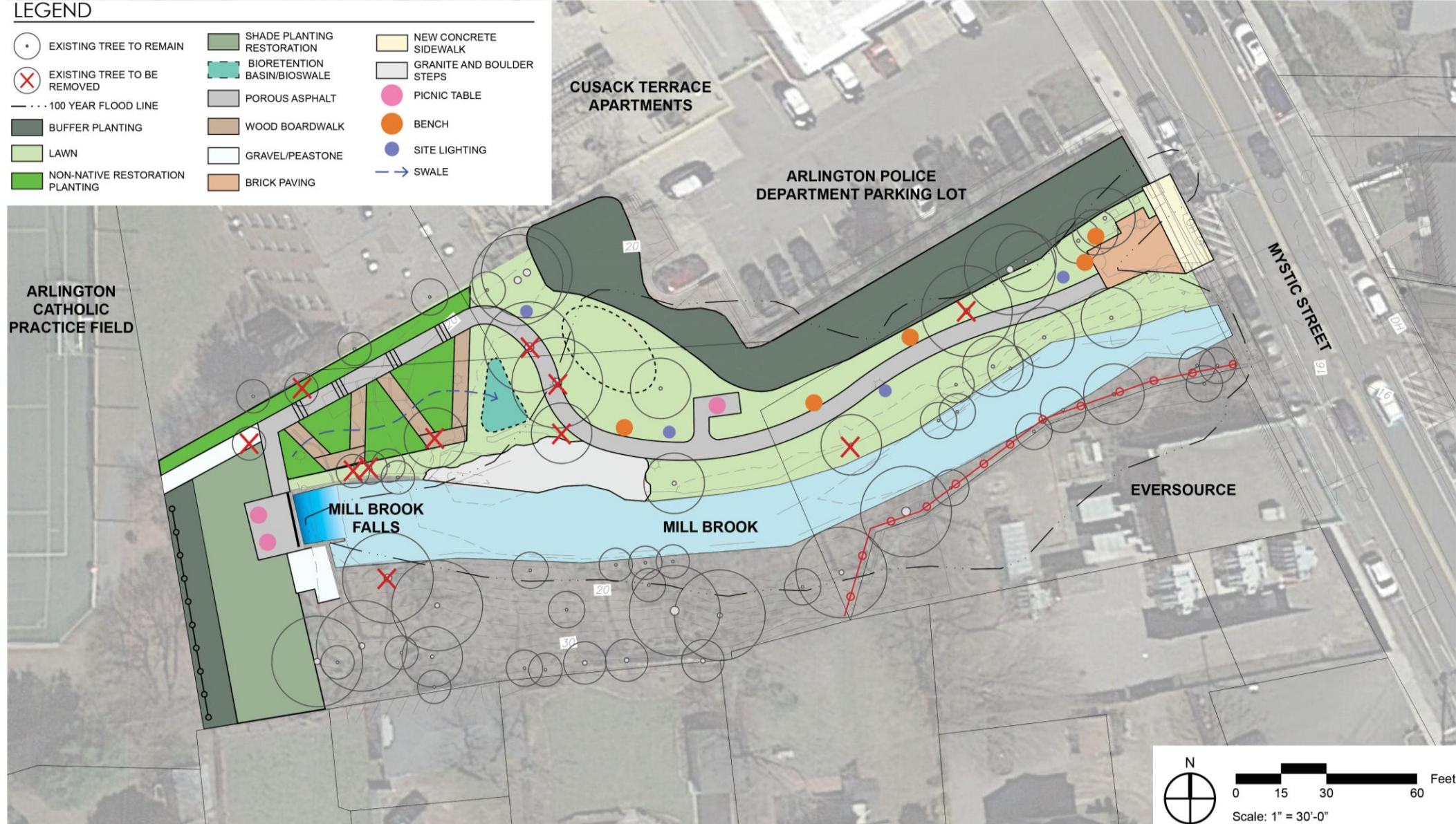
1. ***Carex pennsylvanica***
(Pennsylvania sedge)
2. ***Tiarella cordifolia***
(foamflower)
3. ***Asarum canadensis***
(Canadian wild ginger)
4. ***Eurybia divaricata***
(white wood aster)
5. ***Dryopteris marginalis***
(marginal woodfern)
6. ***Pteridium aquilinum***
(bracken fern)



Concept Alternative 2

LEGEND


 EXISTING TREE TO REMAIN	 SHADE PLANTING RESTORATION	 NEW CONCRETE SIDEWALK
 EXISTING TREE TO BE REMOVED	 BIORETENTION BASIN/BIOSWALE	 GRANITE AND BOULDER STEPS
 100 YEAR FLOOD LINE	 POROUS ASPHALT	 PICNIC TABLE
 BUFFER PLANTING	 WOOD BOARDWALK	 BENCH
 LAWN	 GRAVEL/PEASTONE	 SITE LIGHTING
 NON-NATIVE RESTORATION PLANTING	 BRICK PAVING	 SWALE

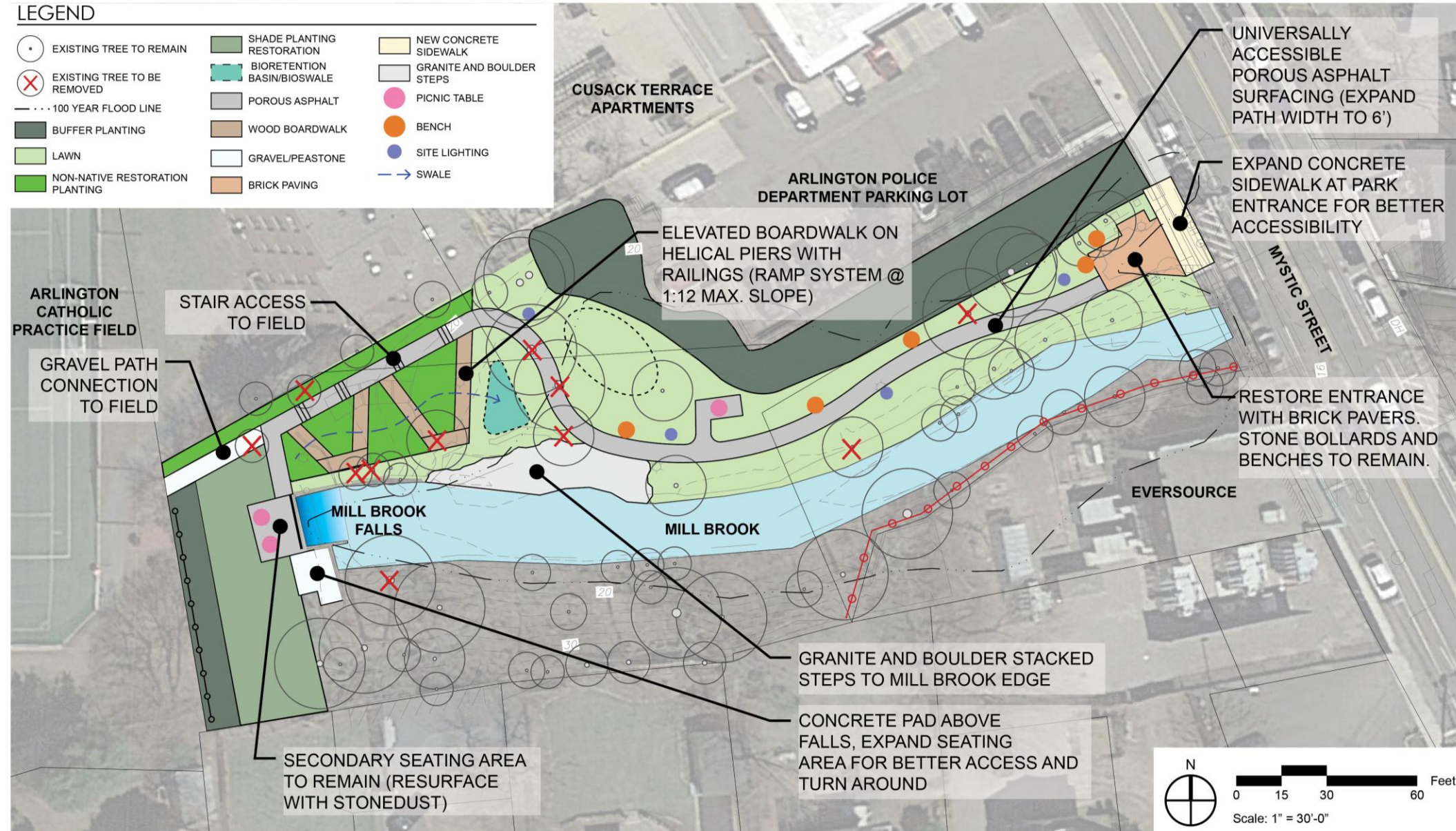


Concept Alternative 2

Surfacing and Accessibility

LEGEND

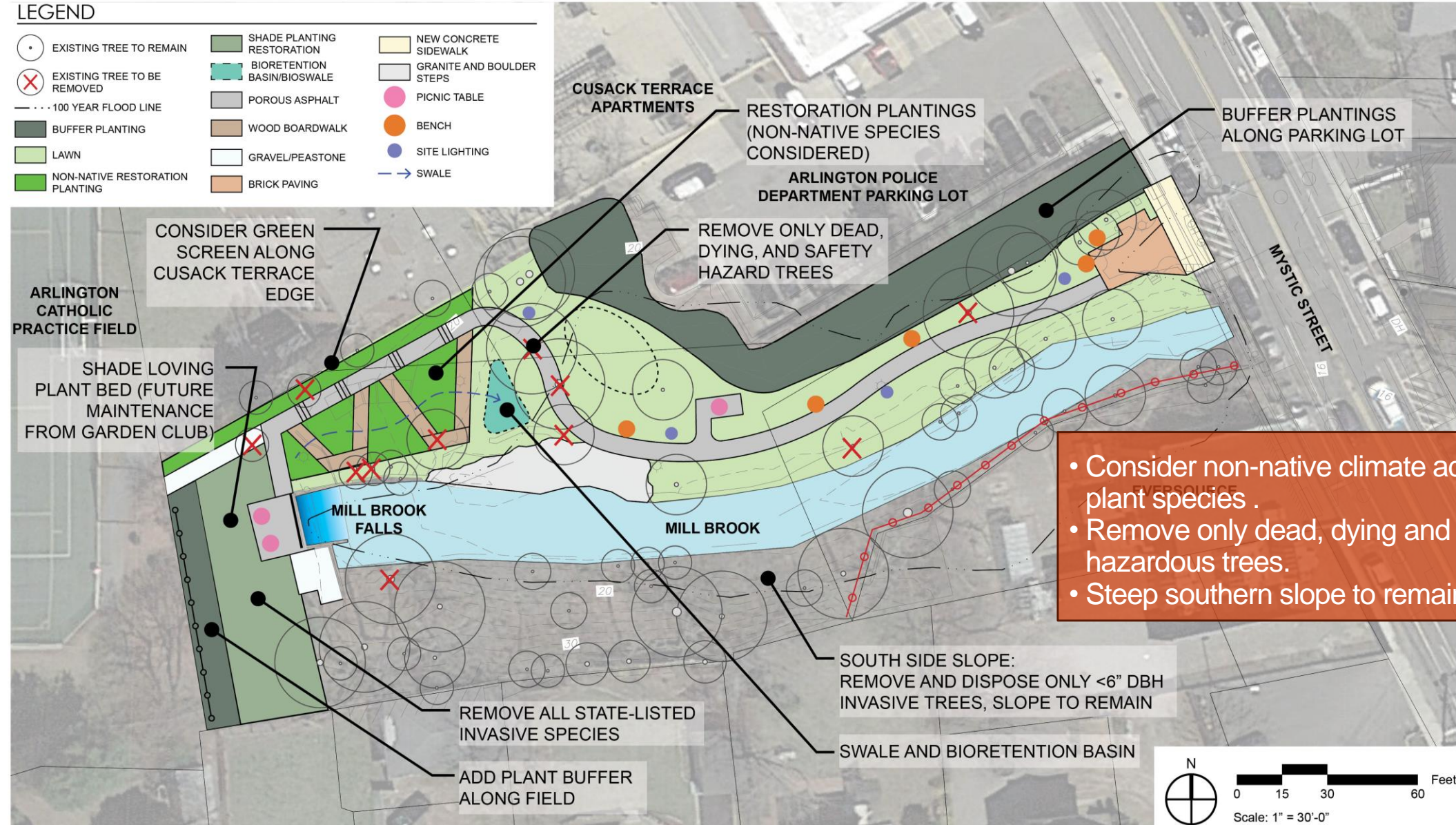
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Concept Alternative 2 Planting, Invasive Management and G.I.

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- Consider non-native climate adaptive plant species .
- Remove only dead, dying and hazardous trees.
- Steep southern slope to remain as is.



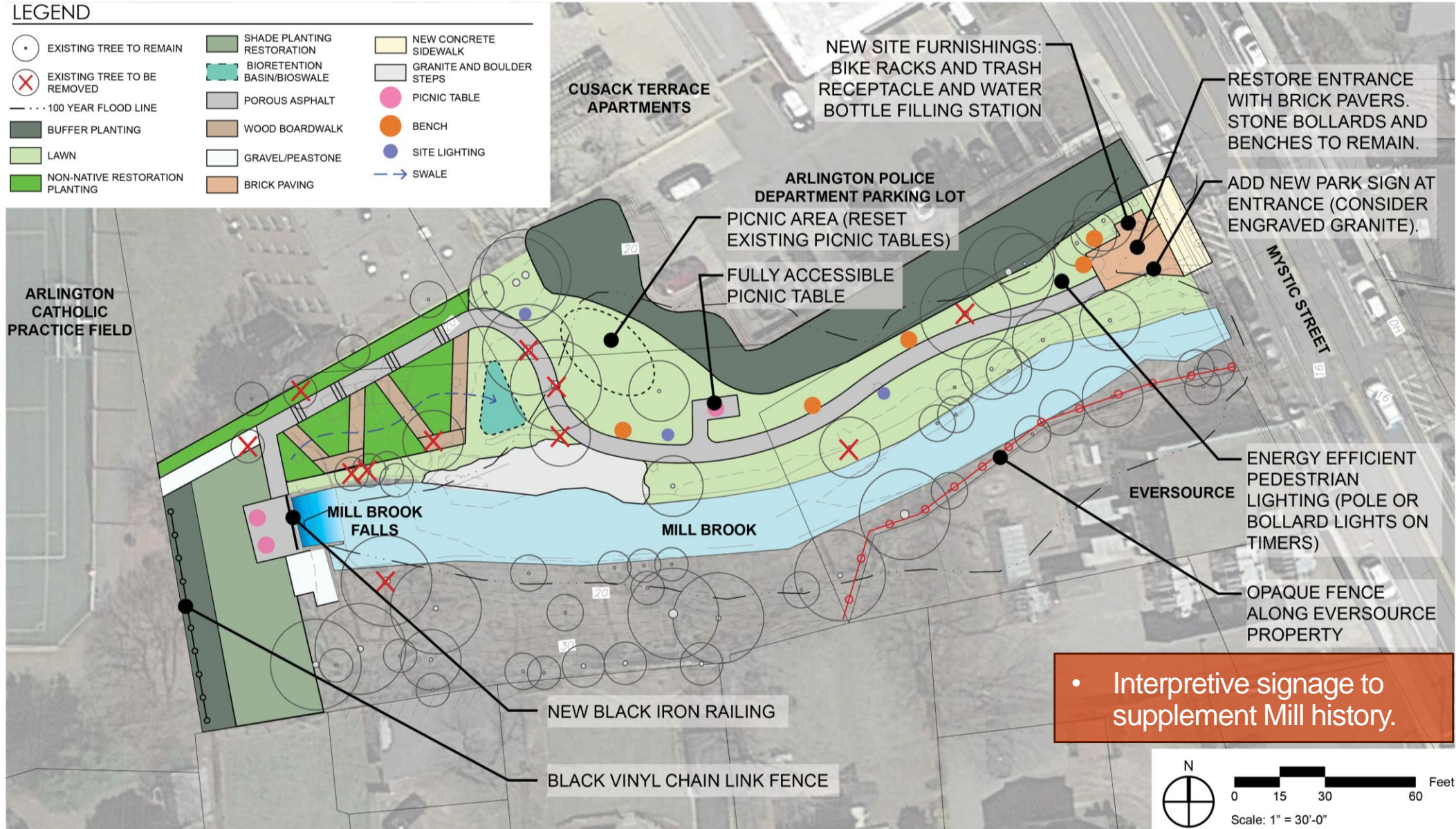
0 15 30 60 Feet
Scale: 1" = 30'-0"

Concept Alternative 2

Site Furnishings

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Alternative 2 - Design Element Examples



Porous Asphalt



Permeable
Pavers



Granite Block and Boulder Water Access
(Watertown Riverfront Park)

Alternative 2 - Design Element Examples



Accessible
Picnic Table



Wood Bench

Hydration Station
Bottle Filler



Alternative 2 - Design Element Examples



Black Iron Railing



LED Bollard



Interpretive Signage

Next Steps

1. Submit Final Feasibility and Preliminary Design Report
(Site Analysis, Concept Alternatives and Cost Estimates)
August 2023
2. Permitting and Construction Documents – TBD
3. Park Construction - TBD

Thank You! Please provide feedback

- **Town of Arlington Contact:**

dmorgan@town.arlington.ma.us

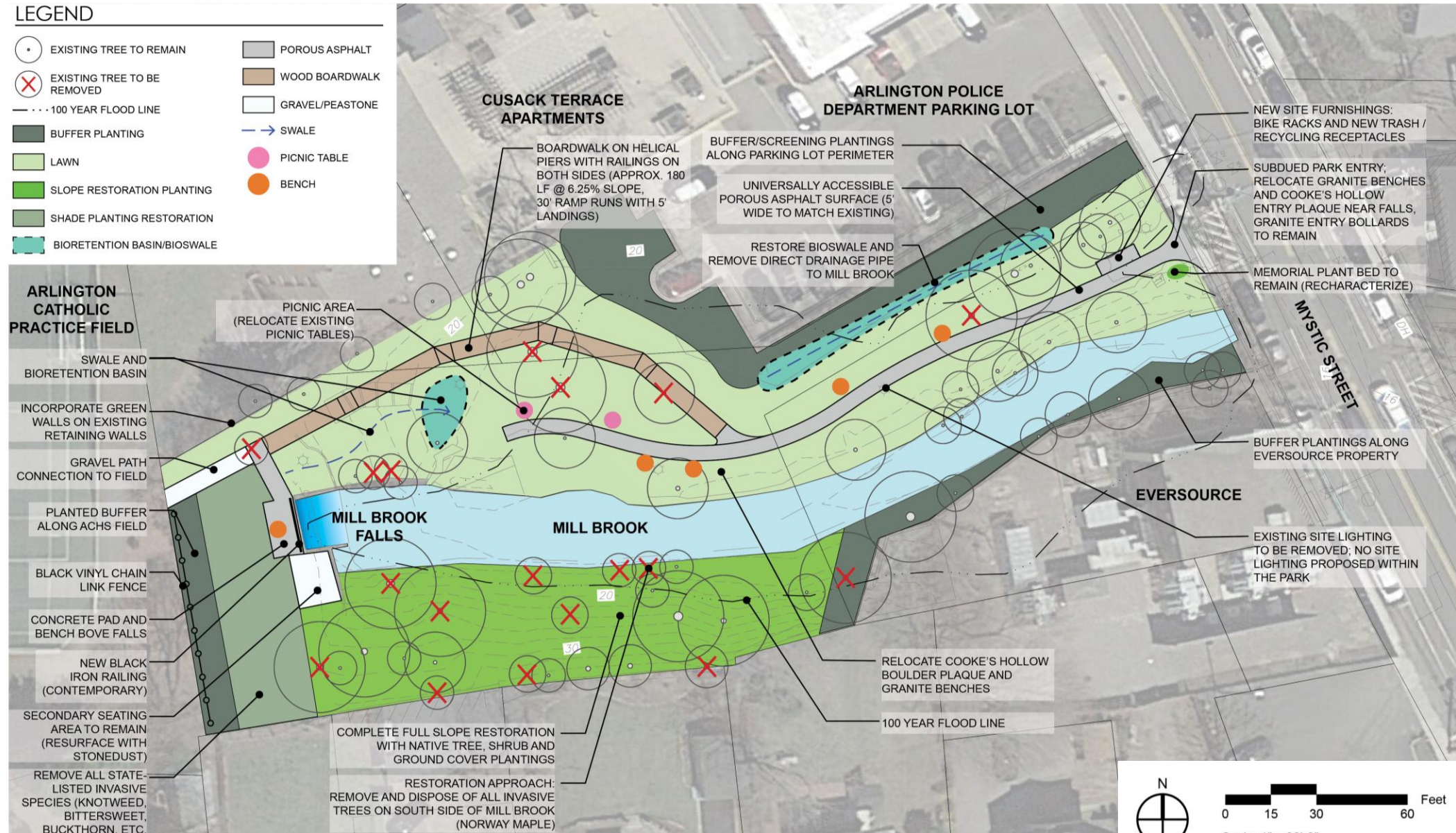
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